

## REMARKS

Claims 1-16 are pending. Claims 2, 3, and 10-12 have been withdrawn from consideration, and claim 16 is added. Claims 1, 4-9, and 13-15 stand rejected. Claim 14 stands rejected under 35 U.S.C. § 112 for insufficient antecedent basis for “the interleaf multiplexer” in line 6. Claim 14 is amended to read “an interleaf multiplexer (184)”, which the undersigned believes overcomes this rejection. Support for new claim 16 is found in Figs. 1A, 1B, and 6, and their associated written descriptions. These amendments and new claims do not add new matter

The written description is amended to correct various grammatical, spelling and typographical errors. These amendments do not add new matter.

A copy of reference number 31 (Becker et al.) is enclosed, as requested by the Examiner on page 4 of the Detailed Action.

The Office Action Summary indicates in item number 10 that the drawings filed on 03March2000 are objected to by the Examiner; however, a Notice of Draftsperson’s Patent Drawing Review (PTO-948) was not attached and it was unclear what action was required by the Applicants to remove the objections. The undersigned telephoned the Examiner to ask whether formal drawings were required with the response to the Office action. The Examiner said that formal drawings were not required at this time and that she would notify the undersigned when further action regarding the drawings was required.

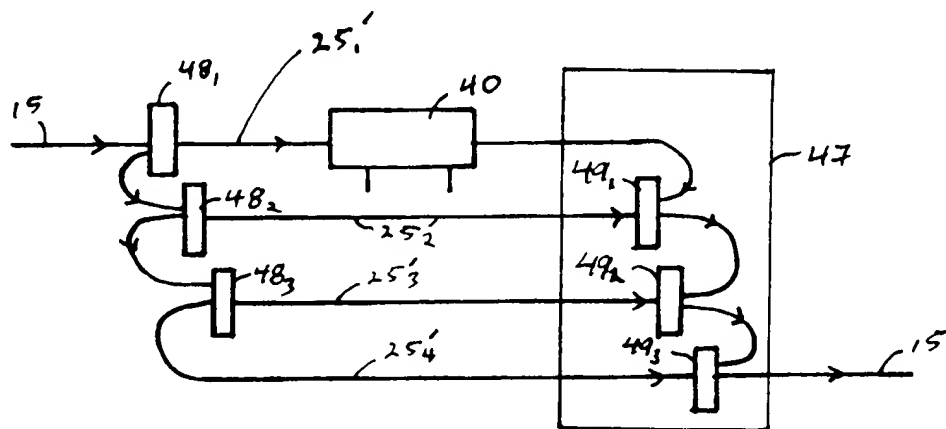
### Rejections Under 35 U.S.C. § 103

Claims 1 and 4-8 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,348,984 by Mizrahi (hereinafter “Mizrahi”). The Examiner cites Mizrahi for disclosing a bypass output port and a bypass input port. The Examiner states that although the output of element 47 is coming from element 49<sub>j</sub>, it would have been obvious to have the outputs coupled from element 49<sub>j</sub> up to 49<sub>1</sub>. The Examiner further states that there would be no functional difference between connecting the filters from 49<sub>1</sub> to 49<sub>j</sub>. The Applicants respectfully traverse the Examiner’s position.

To establish a prima facie case of obviousness, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference. If proposed modification would render

the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 902; 221 USPQ 1125, 1127 (Fed. Cir. 1984).

The undersigned has prepared the diagram shown below of what he believes an optical device according to Fig. 5 of Mizrahi would look like with a three-filter band-combining element 47 with a first optical component, such as ADD/DROP module 40:



Three band-splitting filtering elements 48<sub>1</sub>, 48<sub>2</sub>, 48<sub>3</sub> provide four transmission paths 25<sub>1</sub>, 25<sub>2</sub>, 25<sub>3</sub>, 25<sub>4</sub>. As a threshold matter, the undersigned believes Figs. 6 and 7 of Mizrahi have  $j + 1$  transmission paths, not  $j$ , as shown. The band-combining element 47 includes three filtering elements 49<sub>1</sub>, 49<sub>2</sub>, 49<sub>3</sub>. Each filtering element is shown as a three-port device; therefore, connecting the output 15 to filtering element 49<sub>1</sub>, as suggested by the Examiner, means that one of these three connections is broken in order to connect to the output 15.

The optical array would not operate as claimed by breaking the first transmission path 25<sub>1</sub>', connecting the output 15 to where 25<sub>1</sub>' comes into filtering element 49<sub>1</sub>, and re-routing 25<sub>1</sub>' to the now-vacant port on filtering element 49<sub>3</sub>. Similarly, breaking the cascade path between filtering elements 49<sub>1</sub> and 49<sub>2</sub> de-couples transmission paths 25<sub>3</sub>' and 25<sub>4</sub>' from the output, significantly changing the principle of operation and rendering the optical array inoperative for its intended purpose. Finally, connecting the output 15 to where transmission path 25<sub>2</sub>' enters filtering element 49<sub>1</sub> would only allow wavelengths passed by

filtering element 49<sub>1</sub> onto the output 15. This modification would also render the optical array inoperative for its intended purpose. Therefore, the Applicants believe that claim 1 and all claims that depend from claim 1 are patentable.

Claim 8 recites, among other elements, a plurality of amplifier paths arranged in a cascade, each of the plurality of amplifier paths including a wavelength selective input filter and a wavelength selective output filter. In other words, for N amplifier paths, there would be N input filters and N output filters. Referring to the above diagram, there are four transmission paths, but only three input filters and three output filters. Therefore, the Applicants believe claim 8 is patentable.

Claims 13-15 stand rejected as being unpatentable over Mizrahi as applied to claim 1, and in further view of U.S. Patent No. 6,040,932 by Duck et al. However, the Examiner refers to U.S. Patent No. 6,256,433 by Luo et al. (hereinafter "Luo") in the discussion of claim 13, and the undersigned will respond in light of Luo, rather than Duck et al. The Examiner states that it would have been obvious to have the output of element 620-1 of Luo as the input 15 of Mizrahi and have the demultiplexer 46 of Mizrahi act as the demultiplexer of Luo (630-1, 640-1, 640-1).

Claim 13 recites, among other elements, a bypass input port and optically coupling a modified first portion of a first subset of a plurality of optical channels to a first interleaf multiplexer input, the first interleaf multiplexer input being optically coupled to an optical output transmission line. The Applicants note the Examiner's indication of ADD port 45 in Fig. 2 of Mizrahi as the bypass input port. Connecting the output of the interferometric device 620-1 to the input of bandsplitting element 46 would not result in the invention recited in claim 13.

However, even if the disclosures of Mizrahi and Luo could be combined to result in the claimed invention, the mere fact that the prior art might be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification. *In re Fritch*, 972 F.2d 1260, 23 USPQ2d 1780 (Fed. Cir. 1992)(emphasis added). Furthermore, it is impermissible to use the claimed invention as an instruction manual to piece together the teachings of the prior art so that the claimed invention is rendered obvious. *Id.* (quoting *In re Fine*, 837 F.2d 1071 (Fed. Cir. 1988)). Therefore, the Applicants believe claim 13 is not obvious in view of Mizrahi and

Luo, and that claim 13 and all claims that depend from claim 13 are patentable for at least the reasons given above and the reasons given in support of claim 1.

New Claim 16

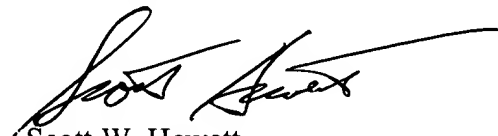
New claim 16, which depends from claim 1, recites that the bypass output port is an open bypass output port and the bypass input port is an open bypass input port. This provides the advantageous and distinctive feature of allowing for future expansion of the optical array by adding additional rungs to the cascade without disrupting existing communication traffic carried on the optical array, as explained on page 8, line 9 to page 9, line 6 and elsewhere. Therefore, the Applicants believe claim 16 is further patentable.

Conclusion

In view of the foregoing, the Applicant believes all claims pending in this Application are in condition for allowance, and that the Applicants are entitled to the claims in accordance with Title 35 of the United States Code, and Art.1, §8, cl.8 of the Constitution of the United States. The Applicant respectfully requests reconsideration of all pending claims, the withdrawal of all rejections, and the issuance of a formal Notice of Allowance at an early date.

Should the Examiner consider necessary or desirable any formal changes anywhere in the specification, claims and/or drawings, then it is respectfully asked that such changes be made by Examiner's Amendment, if the Examiner feels this would facilitate passage of the case to issuance. If the Examiner believes this amendment does not put all pending claims in condition for allowance, the undersigned invites the Examiner to telephone the undersigned at (707) 591-0789.

Respectfully Submitted

  
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